BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Subsidiary Diploma in Engineering Pearson BTEC International Level 3 Foundation Diploma in Engineering Pearson BTEC International Level 3 Diploma in Engineering Pearson BTEC International Level 3 Diploma in Electrical/Electronic Engineering Pearson BTEC International Level 3 Diploma in Mechanical Engineering Pearson BTEC International Level 3 Diploma in Digital Engineering Pearson BTEC International Level 3 Diploma in Manufacturing Engineering Pearson BTEC International Level 3 Diploma in Aeronautical Engineering Pearson BTEC International Level 3 Extended Diploma in Engineering Pearson BTEC International Level 3 Extended Diploma in Electrical/Electronic Engineering Pearson BTEC International Level 3 Extended Diploma in Mechanical Engineering Pearson BTEC International Level 3 Extended Diploma in Digital Engineering Pearson BTEC International Level 3 Extended Diploma in Manufacturing Engineering Pearson BTEC International Level 3 Extended Diploma in Aeronautical Engineering
Unit number and title	**Unit 10: Computer Aided Design in Engineering**
Learning aim(s)	**C:** Develop a three-dimensional computer-aided model for a thin walled product and a fabricated product that can be used as part of other engineering processes.
Assignment title	3D CAD Models for fabricated and thin walled products.
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	You are a second year engineering apprentice in a small to medium manufacturing company. Your supervisor has asked you to produce a portfolio of drawings relating to specific products that the company manufactures. You will be given two current product specifications one for a fabricated assembly and one for a thin walled assembly which need to be examined to determine whether there is a need for any modifications. You are expected to produce 3D models of the individual components and the assembly of each product, and 2D

	drawings relating to each component.
Task 1	**3D Models for fabrications and thin walled items.** You are required to produce two 3D product models using Computer Aided Design software program. The model of a fabricated product should contain at least **six** components in total. The model should contain at least **three** fabricated components that together contain a minimum of four folds, two bends and four slots. The other components in the model may, for example, be rods, dowels and shafts. The model of a thin walled product should contain at least **two** components in total. Both product models should be fully rendered to give a realistic affect. You will need to create a drawing template and 2D orthogonal drawings for all the components in each product model and a drawing of the final 3D shaded/solid model for each product. You must also include a sectional view of a thin walled component and a detailed view of a fabrication component. You should refine your drawings during the drawing process so that they are accurate, realistic and are produced to BS8888. This means that all drawings should give a clear picture so that a third party can fully understand them.
Checklist of evidence required	You are expected to produce a portfolio that includes the following: 1) A 3D model of a fabricated product containing six components in total, all fully rendered. 2) A 3D model of a thin walled product containing at least two thin walled components, all fully rendered, 3) Full working 2D drawings for the components in the thin walled and fabricated products. The fabrication product drawing must contain at least one detailed drawing and the thin walled product drawing must contain at least one sectional view. 4) CAD files for each of the drawings. 5) Printed views of the 3D rendered models.

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
10/C.D3	Refine drawings to an international standard of two accurate and correctly orientated 3D models with realistic rendering that are both fit for purpose.
10/C.M3	Produce an accurate model and drawings, that mainly meet an international standard of at least two well orientated and fully rendered 3D components from a thin walled assembled product.
10/C.M4	Produce an accurate model drawings, that mainly meet an international standard of at least four well orientated and fully rendered 3D components from a fabricated assembled product.
10/C.P5	Create partially rendered models and drawings of at least two 3D components from a thin walled assembled product.
10/C.P6	Create partially rendered models and drawings of at least four 3D components from a fabricated assembled product.

Sources of information to support you with this Assignment	**Textbooks** Tickoo, S., SolidWorks 2016: A Tutorial Approach, CADCIM, ISBM 978-1-942689-19-1, 2016. Tutorial Books, Autodesk AutoCAD 2016 and Inventor 2016, AutoDesk. ISBM 9781519466631, 2016. Toogood, R., Pro/ENGINEER Wildfire 5.5 Tutorial and Multimedia CD, Perfect Paperback, ISBM The internet will be a good resource generally for this subject ranging from data available from suppliers to specific information available from educational organisations. Care must be exercised in respect of the suitability. **Further useful resources may be found at** http://qualifications.pearson.com/en/support/published-resources.html#step1
Other assessment materials attached to this Assignment Brief	